

Instruments in the Cognitive Map: A Cross-Linguistic Exploration*

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Rhee, Seongha. 2008. Instruments in the Cognitive Map: A Cross-Linguistic Exploration. *The Perspectives of Linguistics in the 21st Century*, 73-87. Instrumentality is a salient notion both conceptually and linguistically. It is closely related to other grammatical categories such as comitative, status, agent, accompaniment, ablative, allative, etc. The interrelationship among these grammatical categories is based on conceptual extension. This paper argues that conceptual extension is largely based on a single event schema of “Movement” and “Association”, and that all the sense categories along this event schema have metonymic relationship. The emergence of the “Instrumentality” sense is directly enabled by comitative through subjectification in most languages. “Instrumentality” gives rise to “agency” (agent, cause) through focus shift and subjectification. Antonymization occurs both in Korean (Allative-Ablative) and English (Opposition-Support). The antonymization process is largely attributable to focus variation, and is the cumulative effect of small step metonymic changes. Synchronic coexistence of antonymous uses suggests that language users are generally not mindful of semantic clashes between the meanings associated with a single form. Conceptual extension patterns as presented in this research suggest the grammaticalization channel and the universal path in grammaticalization processes of instrumental markers. **(Hankuk University of Foreign Studies)**

Key words: conceptual extension, instrumentality, focus shift, subjectification, antonymization

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1. Introduction

Instrumentality as a grammatical concept is salient judging from its frequent occurrence in language use, and, considering the significance of use frequency of linguistic forms (Bybee 1985, Bybee & Hoper 2001) it may even be a cross-linguistic universal. For instance, Korean *-lo* in Korean ranks 13th out of 184 grammatical forms (National Academy of Korean 2002), and English *with* ranks 14th out of 404 prepositions listed in Oxford English Dictionary (1991, 2nd ed.) (see also Johansson & Hofland 1989 for frequency data based on the LOB Corpus).

There is an intricate relationship instrumentality and other grammatical concepts, such as comitative and status (Nichols & Timberlake 1991); agent and accompaniment (Schlesinger 1979); and ablative, allative, directional and contingency (Rhee 2006, Koo & Rhee 2006, Rhee & Koo 2006). Despite the close relationship among these grammatical concepts, little attention has been paid to how they are interrelated and how such interrelations are motivated.

The objectives of this research are twofold: to show how the development of instrumentality is motivated; and to show how related grammatical concepts form a cognitive map.

2. Lexical sources

The instrumental case marker develops from diverse lexical sources as shown in (1):

- (1) Coexistence > Instrumental (Lakoff & Johnson 1980; Lehmann 1982: 111; Heine et al. 1991: 163ff)
 - Grasping > Instrumental
 - Body-parts > Instrumental
 - Path > Instrumental (Heine & Kuteva 2002)
 - Action 'use' > Instrumental
 - Opposition > Instrumental

There are extensive lists of languages that developed from diverse lexical

and grammatical sources into instrumentals as listed in the following:

(2) Languages and source words with the [Comitative/Coexistence > Instrumental] Changes

Ga	<i>kɛ</i>	‘with’ (Heine & Kuteva 2002)
Dogon	<i>-le</i>	‘with’ (Calame-Griaule 1968: 177)
Baka	<i>tɛ</i>	‘with’ (Kilian-Hatz 1992: 58)
Ewe	<i>kplé</i>	‘with’ (Claudi & Heine 1986: 321)
Ngbaka Ma’Bo	<i>tɛ</i>	‘with’ (Thomas 1970: 115)
Turkish	<i>ile</i>	‘with’ (Lewis 1985[1967]: 86)
Moré	<i>né</i>	‘with’ (Canu 1976: 153)
Latin	<i>cum</i>	‘with’ (Heine & Kuteva 2002)
Albanian	<i>me</i>	‘with’ (Buchholz et al. 1993: 312)
Hungarian	<i>-vel/-va</i>	‘with’ (Tompa 1972: 120)
Bulgarian	<i>s</i>	‘with’ (Heine & Kuteva 2002)
Imbabura Quechua	<i>-wan</i>	‘with’ (Cole 1982: 114)
Yagua	<i>-ta</i>	‘with’ (Payne & Payne 1990: 454-5)
Mezquital Otomi	<i>ko</i>	‘with’ (Hess 1968: 83, 89)
Spanish	<i>con</i>	‘with’

(3) Languages and source words with the [‘Take/Grasp’ > Instrumental] Changes

Lahu	<i>yùlɛ</i>	‘take’ (Matisoff 1991: 434)
Chinese	<i>ba</i>	‘take’ (Peyraube 1988: 619-26, 1996: 168ff)
Nupe	<i>la</i>	‘take’ (Lord 1989: 226-7)
Dagbane	<i>zang</i>	‘take’ (Lord 1989: 227)
Efik	<i>dá</i>	‘take’ (Welmers 1968: 69; Claudi 1993: 45)
Kolokuma (Ijo)	<i>akí-nì</i>	‘take’ (Williamson 1965: 53; Claudi 1993: 46)
Idoma	<i>bi</i>	‘hold’ > Instrumental (Lord 1989:217)
Akan	<i>de</i>	‘take/hold’ > Instrumental (Lord 1982: 281)

(4) Languages and sources with the [Body (Part) > Instrumental] Changes

Nama	<i>khà-b</i>	‘body, side, flank’ (Hagman 1977)
Sumerian	<i>da</i>	‘side’ (Meißner & Oberhuber 1967: 35)

Even though fewer languages seem to follow these patterns, there are other cases. For instance, according to Lord (1973) there are languages where MEET has changed into instrumental (and manner); and Thai *caak* ‘depart, part’ serves the instrumental function. Interestingly, Thai *chai* ‘use’ seems to weakly carry the instrumental function, whereas Mandarin *yòng* ‘use’ is a robust instrumental marker (Matisoff 1991). English preposition with is the primary instrumental marker but it is developed from the oppositional meaning of ‘against’ (Rhee 2004).

3. Related concepts

3.1 Grammatical concepts

The instrumental case forms intricate relationships with other grammatical notions. The following lists show the concepts related to instrumental.

- (5) a. Korean: allative, directional, orientation (=static directional), path, manner, aspect, material, instrument, resultative, status, similitive, cause, selective, temporal locative, temporal ablative, contingency, emphatic (Koo 2006, Koo & Rhee 2006, Park 1999) (N.B. allative vs. ablative)
- b. English: opposition, association, accompaniment, possession, support, contingency (=attendant circumstance), accordance, instrumental, cause, agent (Rhee 2004) (N.B. opposition vs. accordance)
- c. Japanese: locative, material, superlative, scope, contingent condition, temporal, causal (Rhee 2006)
- d. Spanish: comitative, associative, affiliative, contingent (Rhee 2006)

3.2 Lexical concepts

As is the case with the grammatical concepts, there are diverse lexical concepts that have close relationship with instrumental, such as COEXIST, HOLD, TAKE, USE, SIDE, MEET, DEPART, WAY, MOVE, etc.. They can be grouped into five main lexical categories as in (6).

- (6) a. “togetherness”: MEET, USE, HOLD, TAKE, COEXIST
- b. “physical proximity/contiguity”: COEXIST, SIDE, FLANK
- c. “non-primariness”: SIDE, FLANK
- d. “source of (force): DEPART
- e. “direction”: WAY, MOVE

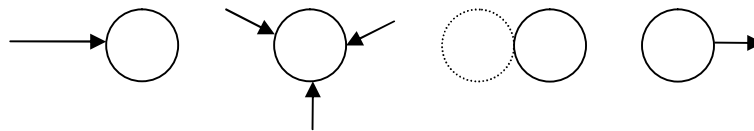
4. Cognitive map of instrumentality

4.1 Lexico-grammatical connections

The concept of instrumentality, by virtue of having conceptual contiguity with other grammatical concepts, forms connections and the connection pattern forms a cognitive map. There are four major conceptual chains, as illustrated in the following discussion.

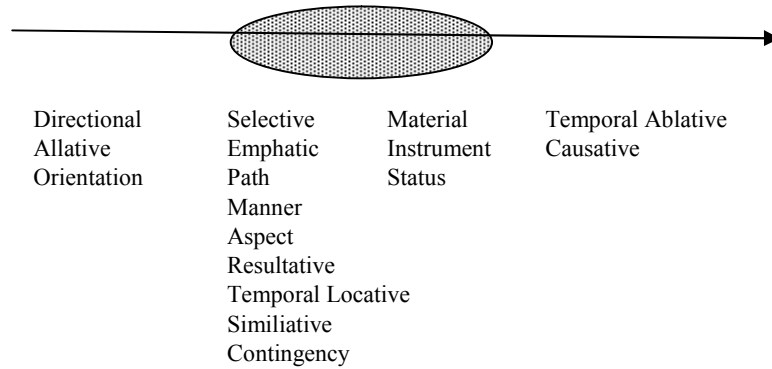
Type A: [Direction-Selection-Association-Departure Eventive Chain]

- (7) A. DIRECTION **B. SELECTION** C. ASSOCIATION D. DEPARTURE



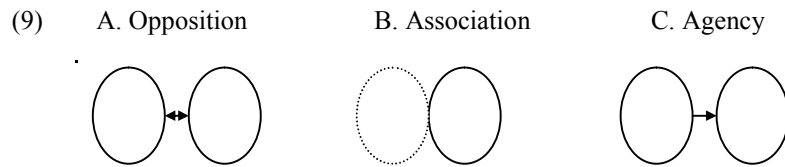
Type A chain is derivative from a eventive chain involving a trajectory traversing through a landmark as can be diagrammatically represented as in (8).

(8) DIRECTION SELECTION ASSOCIATION DEPARTURE

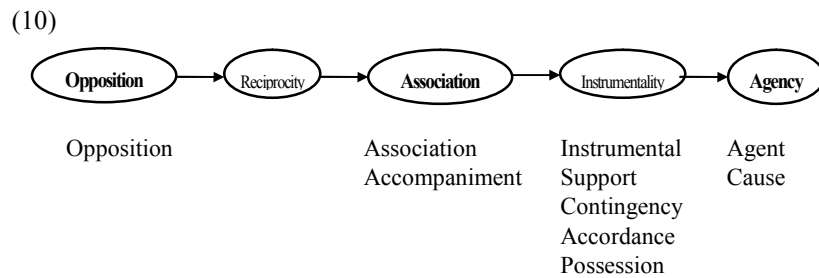


The next chaining category in the typology is as shown in (9):

Type B: [Opposition-Association-Agency Eventive Chain]



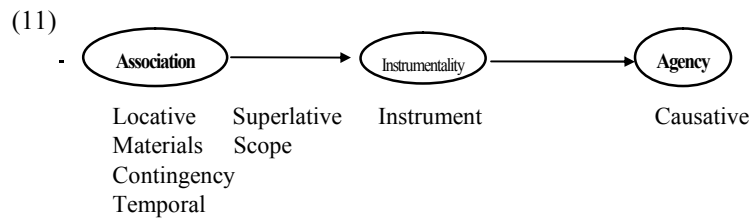
Type B is attested in English, where with, originally denoting oppositional concept as ‘against’, changed to a cooperative meaning ‘with the help of’ and further to instrumental and agentive meanings, as below.



Unlike Type B, where there are two intervening concepts such as

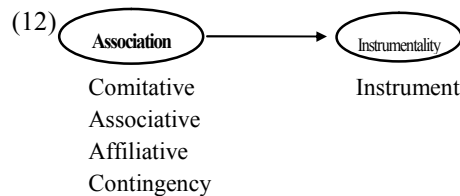
Reciprocity and Instrumentality, Type C is simpler by the absence of those concepts, as illustrated below, representing the pattern attested in Japanese.

Type C: [Association-Instrumental-Agency] Chain



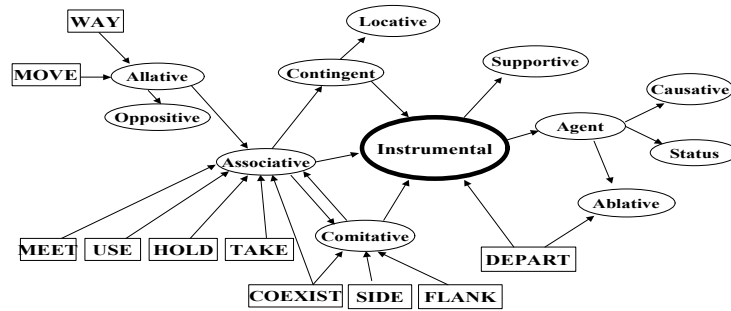
The final type of chaining category is considerably simplified version as shown in (12) below. The pattern modeled in (12) represents many languages with simpler development. This is the situation found in Spanish, Latin, and many other languages.

Type D: [Association-Instrumental Chain]



With the chaining patterns as discussed above, a cognitive map can be constructed as in (13) (where squares represent lexical and ovals represent grammatical concepts).

(13)



In the cognitive map of instrumental, it is evident that Associative is the most common stepping stone for the development of Instrumental, and as Comitative is also a very closely related concept to Associative, it is also a common gateway to Instrumental. We can enjoy looking this diagram, taking time later, and we will discuss the mechanisms.

4.2 Connection mechanisms

In grammaticalization literature cognitive mechanisms that enable semantic change have been of particular interest and been widely discussed. Some of such mechanisms and their characteristics are listed in (14).

- (14) a. Metaphor: extension across domains per similarity
 b. Metonymy: extension per contiguity
 c. Subjectification: extension of objective meaning to subjective meaning (Traugott 1982)
 d. Focus variation: selective focus on a particular aspect (Langacker's (1991) Active Zone; Lakoff's (1987) Image Schema Transformation; Rhee's (2000) Frame-of-Focus Variation)
 e. Generalization: loss of semantic specificity (Bybee et al. 1994)

As illustrated in (15)-(16), there are many instances of metaphorization across conceptual domains; e.g. from Spatial ablative to Temporal ablative involves the domain change from space to time, and the similarity relation in this cognitive operation can be of: Temporal departure is spatial departure. Likewise, the change from Coexistence to Association shows the domain change from Physical Space to Mental Relation with the similarity relation of Psychological closeness is spatial closeness.

(15) Instrumental > Causative: Physical space > Epistemic Agency.

“Cause of event is physical instrument.”

Selective > Temporal Locative: Space > Time.

“Temporal location is spatial location.”

Temporal ablative > Causative

“Cause of event is temporal departure.”

Departure > Instrumental: Space > Purpose.

“Purpose in mind is departure in space.”

- | | | |
|--------------------------|---|------------------------|
| (16) a. Spatial Ablative | > | Temporal Ablative |
| SPACE | | TIME |
| b. Coexistence | > | Association |
| PHYSICAL | | MENTAL |
| SPACE | | RELATION |
| c. Instrumental | > | Causative |
| PHYSICAL | | EPISTEMIC |
| SPACE | | AGENCY |
| d. Selective | > | Temporal Locative |
| SPACE | | TIME |
| e. Path | > | Manner |
| SPACE | | BEHAVIORAL/ATTITUDINAL |
| f. Temporal Ablative | > | Causative |
| TIME | | CAUSALITY |
| g. Departure | > | Instrumental |
| SPACE | | PURPOSE |

Metonymy is also a common conceptual mechanism. Metonymy is based on

the contiguity relationship. Because of ‘togetherness’ relation Opposition becomes Association. Likewise, Proximity relation triggers change from Reciprocity to Association. Furthermore, there are workings of teleological contiguity. With our encyclopedic knowledge about how events are related, this connection-relation is used. Some are listed in (17).

- (17) a. Opposition > Association ← Togetherness
 b. Reciprocity > Association ← Proximity
 c. Directional > Selection ← teleological contiguity
 d. Selection > Association ← teleological contiguity
 e. Orientation > Directional ← procedural contiguity
 f. Directional > Allative ← procedural contiguity
 g. Path > Resultative ← procedural contiguity
 h. Material > Instrumental ← focus on concomitance of enabling force

Subjectification has been a popular topic of research since the concept was proposed by Traugott (1982) and elaborated in Traugott & Dasher (2003). Humans tend to develop more internal, more subjectified meanings from external, objective meanings. Such strong subjectification tendencies are well illustrated in (18).

- (18) a. Opposition > Reciprocity ← Attribution of interaction
 b. Association > Instrumentality ← Attribution of purposefulness
 c. Association > Possession ← Attribution of ownership
 d. Association > Support ← Attribution of volition
 e. Instrumental > Causative ← Attribution of causality
 f. Direction > Selection ← Attribution of accomplishment
 g. Selective > Material ← Attribution of homogeneity of composition
 h. Selective > Emphatic ← Contrastive focus on result
 i. Material > Status ← Focus on association/enabling condition
 j. Contingency > Accompaniment ← Attribution of volition
 k. Accompaniment > Accordance ← Attribution of volition

Semantic generalization is another common cognitive mechanism. Through semantic generalization, certain semantic components disappear and the

meaning of a form becomes increasingly general. For example, Reciprocity becomes Association when the semantic component of Interaction is lost. Likewise if the adversativity, or hostility is lost, Opposition becomes Reciprocity, as shown in (19).

- (19) a. Reciprocity > Association ← loss of interaction
 b. Opposition > Reciprocity ← loss of adversativity

Finally, focus variation is a common mechanism, largely due to the fact that humans tend to construe the states of affairs in terms of schematicity and iconicity. In the eventive chain of Direction, Selection, Association and Departure, this unitized, holistic event of a figure (trajectory) going through a backgrounded entity (ground) can receive differential focus: before arriving at the goal, arriving at the goal, and leaving the goal. Depending on which sub-event of the holistic event is focused, various grammatical concepts may arise. In this sense, the frame-of-focus variation is the work of metonymy and subjectification. Through this frame-of-focus variation, the mysterious antonymization may be easily explained away: as a reversal of focus as a result of focus frame variation.

5. Summary and conclusion

The foregoing discussion can be summarized as the following. Conceptual extension is largely based on a single event schema of “Movement” (Direction) and “Association”. All the sense categories along this event schema have metonymic relationship. The emergence of the “Instrumentality” sense is directly enabled by comitative (association) through subjectification in most languages. “Instrumentality” gives rise to “agency” (agent, cause) through focus shift and subjectification. Antonymization occurs both in Korean (Allative-Ablative) and English (Opposition-Support). The antonymization process is largely attributable to focus variation, and is the cumulative effect of small step metonymic changes. Synchronic coexistence of antonymous uses suggests that language users are generally not mindful of semantic clashes between the meanings associated with a single form. Conceptual extension patterns suggest the grammaticalization channel (Heine et al.

1991) and the universal path (Bybee et al. 1994) in grammaticalization processes of instrumental markers.

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